## CLAIMS:

What is claimed is:

5 1. A method in a multi-processor data processing system for managing processors, the method comprising:

responsive to detecting a failed processor in a set of processors on a multi-chip module, identifying a spare processor on the multi-chip module; and

- assigning the spare processor to replace failed processor.
  - 2. The method of claim 1, wherein the spare processor on the multi-chip module is marked for use as a spare.

15

- 3. The method of claim 1 further comprising: selecting another spare processor on a different multi-chip module if the spare processor is absent.
- 20 4. The method of claim 1, wherein the spare processor is marked by an open firmware.
  - 5. A method in a data processing system for managing processors, the method comprising:
- 25 monitoring for a failed processor in the processors; and

5

10

20

responsive to detecting a failed processor, identifying a spare processor from a set of spare processors, wherein the set of spare processors are located on different modules and wherein the spare processor is identified as minimizing degradation in processing performance.

- 6. The method of claim 5, wherein the spare processor is selected from a module containing the failed processor.
- 7. The method of claim 6, wherein the spare processor is selected from a die containing the failed processor.
- 15 8. A multi-processor data processing system for managing processors, the data processing system comprising:

detecting means for detecting a failed processor in a set of processors on a multi-chip module, identifying a spare processor on the multi-chip module; and

assigning means for assigning the spare processor to replace failed processor.

The multi-processor data processing system of claim
8, marking means for marking the spare processor on the multi-chip module for use as a spare.

10. The multi-processor data processing system of claim 8 further comprising:

selecting means for selecting another spare processor on a different multi-chip module if the spare processor is absent.

11. The multi-processor data processing system of claim 8, marking means for marking the spare processor by an open firmware.

10

15

20

25

5

12. A multi-processor data processing system in a data processing system for managing processors, the data processing system comprising:

monitoring means for monitoring for a failed processor in the processors; and

detecting means for detecting a failed processor, identifying a spare processor from a set of spare processors, wherein the set of spare processors are located on different modules and wherein the spare processor is identified as minimizing degradation in processing performance.

- 13. The multi-processor data processing system of claim 12, selecting means for selecting the spare processor from a module containing the failed processor.
- 14. The multi-processor data processing system of claim 13, selecting means for selecting the spare processor from a die containing the filed processor.

15. A computer program product in a computer readable medium for managing processors, the computer program product comprising:

first instructions responsive to detecting a failed processor in a set of processors on a multi-chip module, identifying a spare processor on the multi-chip module; and

second instructions assigning the spare processor to replace failed processor.

10

, . .

- 16. The computer program product of claim 15, wherein the spare processor on the multi-chip module is marked for use as a spare.
- 15 17. The computer program product of claim 15 further comprising:

third instructions for selecting another spare processor on a different multi-chip module if the spare processor is absent.

20

- 18. The computer program product of claim 15, wherein the spare processor is marked by an open firmware.
- 19. A computer program product in a computer readable 25 medium in a data processing system for managing processors, the computer program product comprising:

first instructions for monitoring for a failed processor in the processors; and

second instructions responsive to detecting a failed processor, identifying a spare processor from a set of spare processors, wherein the set of spare processors are located on different modules and wherein the spare processor is identified as minimizing degradation in processing performance.

- 20. The computer program product of claim 19, wherein the spare processor is selected from a module containing 10 the failed processor.
  - 21. The computer program product of claim 20, wherein the spare processor is selected from a die containing the filed processor.